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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,294	04/27/2000	Georgene M. Nielsen	Nielsen 3	3077

24283 7590 04/21/2006

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EXAMINER

LE, LANA N

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/560,294

Applicant(s)

NIELSEN, GEORGENE M.

Examiner

Lana N. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-13 and 15-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,3-7,9-13 and 15-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6-7, 12-13, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bodin et al (US 5,241,685).

Regarding claim 1, Bodin et al disclose a system for load balancing, for wireless communication having a plurality of cells (cl-cl 0), each cell adapted to serve a plurality of mobile subscriber stations (col 2, lines 50-64), comprising:

means responsive to receipt of a service request from a mobile subscriber station (ml-m9) for establishing communication connection for the requesting mobile subscriber station via at least one of the plurality of cells (col 4, lines 37-40),

means for determining when assignment of the mobile subscriber station to a cell results in a predetermined threshold (critical value X) being exceeded comprising:

means for measuring a traffic load (measuring traffic occupancy level) in the cell (col 8, lines 34-39),

means for comparing (at step 102) the measured traffic load to a predetermined traffic load threshold (col 8, lines 34-39),

means, responsive to the predetermined threshold (X) being exceeded for identifying at least one of a plurality of mobile subscriber stations served by the cell for reassignment to another cell (cell with lowest occupancy level selected) based upon the class of service of the plurality of mobile subscriber stations (col 8, lines 37-51; col 5, lines 1-15).

Regarding claim 6, Bodin et al disclose the system for load balancing of claim 5 wherein the means for identifying further comprises: means, responsive to the means for effecting, for reviewing the secondary criteria to determine whether additional handoffs of mobile subscriber stations to other cell sites is advisable (col 8, lines 50-56).

Regarding claim 7, Bodin et al disclose a method of load balancing based on class of service for wireless communication networks having a plurality of cells, each cell adapted to serve a plurality of mobile subscriber stations, comprising the steps of:

establishing in response of a service request from a mobile subscriber station (m1-m9) communication connection for the requesting mobile subscriber station via at least one of the plurality of cells (col 4, lines 37-40);

determining when assignment of the mobile subscriber station to a cell results in a predetermined threshold (critical value X) being exceeded comprising:

measuring a traffic load (measuring a traffic occupancy level) in the cell, comparing (at step 102) the measured traffic load to a predetermined traffic load threshold (col 8, lines 34-39),

identifying, in response to the predetermined threshold being exceeded, at least one of a plurality of mobile subscriber stations served by the cell for reassignment to

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another cell (cell with lowest occupancy level selected; col 8, lines 37-51; col 5, lines 1-15).

Regarding claim 12, Bodin et al disclose the method of load balancing of claim 11, wherein the step of identifying further comprises: reviewing, in response to the step of effecting, the secondary criteria to determine whether additional handoffs of mobile subscriber stations to other cell sites is advisable (col 8, lines 50-56).

Regarding claim 13, Bodin et al disclose a system for load balancing for wireless communication networks having a plurality of cells (ci-c10), each cell adapted to serve a plurality of mobile subscriber stations (ml-m9), comprising:

service request processing means, responsive to receipt of a service request from a mobile subscriber station, for establishing a communication connection for the requesting mobile subscriber station via at least one of the plurality of cells (col 4, lines 37-40);

the load determining means for determining when assignment of the mobile subscriber station to a cell results in a predetermined threshold (critical value X) being exceeded, comprising:

traffic load measurement means for measuring a traffic load (measuring traffic occupancy level) in the cell (col 8, lines 34-39);

traffic threshold means for comparing the measured traffic load to a predetermined traffic load threshold (col 8, lines 34-39);

subscriber class of service identification means responsive to the predetermined threshold (X) being exceeded (col 6, lines 9-42), for identifying at least one of a

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plurality of mobile subscriber stations (m1-m9) served by the cell for reassignment to another cell (cell with lowest occupancy level selected; col 8, lines 37-51; col 5, lines 1-15).

Regarding claim 18, Bodin et al disclose the system for load balancing of claim 17 wherein the subscriber class of service identification means further comprises: threshold review means, responsive to the handoff activation means for

Reviewing the secondary criteria to determine whether additional handoffs of mobile subscriber stations to other cell sites (remaining cells of current MSC is handled) is advisable (col 8, lines 50-56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5, 9-11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin et al (US (US 5,241,685) in view of Hsu et al (US 6,169,898).

Regarding claim 3, Bodin et al disclose a system for load balancing of claim 1, wherein Bodin et al do not disclose wherein the means for identifying comprises: means for determining a class of service for the plurality of mobile subscriber stations served by the cell; means for selecting at least one mobile subscriber station

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having the lowest class of service of the plurality of mobile subscriber stations served by the cell; means for identifying another cell capable of serving the selected at least one mobile subscriber station. Hsu et al disclose means for identifying comprises means for determining a class of service for the plurality of mobile subscriber stations served by the cell (col 6, lines 18-33);

means for selecting at least one mobile subscriber having the lowest class of service of the plurality of mobile subscriber stations served by the cell (col 2, line 59 – col 3, line 29);

means for identifying another cell capable of serving the selected at least one mobile subscriber station (col 5, lines 23-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add selecting the mobile based on class of service in order to move the mobile with the lowest quality of service to the new cell first and leave the higher quality service mobile calls uninterfered with since less resources are available to those mobiles with less paid subscription and they are more likely to be moved to the less loaded cell as suggested by Hsu et al (col 6, lines 18-32).

Regarding claim 4, Bodin et al and Hsu et al disclose the system for load balancing of claim 3 wherein Hsu et al disclose the means for arbitrating among ones of at least one mobile subscriber station having the lowest class of service of the plurality of mobile subscriber stations served by the cell, using additional criteria selected from call management factors, such as duration of call connection, location of mobile subscriber within the cell, proximity to an adjacent cell, signal strength in

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adjacent cells, and the like (col 5, lines 23-30; col 6, lines 18-32, lines 54-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use additional criteria in order to select the proper mobile based on, i.e. the location of the mobile, signal strength in adjacent cells so that there can be proper allocation of allocation of resources available to the paid user as suggested by Hsu et al (col 6, lines 54-64; col 5, lines 23-31).

Regarding claim 5, Bodin et al and Hsu et al disclose the system for load balancing of claim 3 wherein Hsu et al disclose the means for identifying further comprises: means for effecting a handoff of a communication connection that serves the selected at least one mobile subscriber station from the cell to the another cell (col 6, lines 31-39; col 6, line 65 – col 7, line 13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to handoff a communication connection from one cell to the other cell in order to maintain the call connection for the selected mobile station.

Regarding claim 9, Bodin et al disclose the method of load balancing of claim 7 wherein Bodin et al do not disclose the step of identifying comprises:

determining a class of service for the plurality of mobile subscriber stations served by the cell; selecting at least one mobile subscriber station having the lowest class of service of the plurality of mobile subscriber stations served by the cell;

identifying another cell capable of serving the selected at least one mobile subscriber station. Hsu et al disclose the step of identifying comprises:

determining a class of service for the plurality of mobile subscriber stations

served by the cell (col 2, line 59 - col 3, line 29);

selecting at least one mobile subscriber station having the lowest class of service of the plurality of mobile subscriber stations served by the cell (col 5, lines 23-31);

identifying another cell capable of serving the selected at least one mobile subscriber station (col 6, lines 23-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add selecting the mobile based on class of service in order to move the mobile with the lowest quality of service to the new cell first and leave the higher quality service mobile calls still connected to the same cell since less resources are available to those mobiles with less paid subscription as suggested by Hsu et al (col 6, lines 18-32).

Regarding claim 10, Bodin et al and Hsu et al disclose the method of load balancing of claim 9 wherein Hsu et al disclose the step of selecting comprises:

arbitrating among ones of at least one mobile subscriber station having the lowest class of service of the plurality of mobile subscriber stations served by the cell, using additional criteria selected from call management factors, such as: duration of call connection, location of mobile subscriber within the cell, proximity to an adjacent cell, signal strength in adjacent cells, and the like (col 5, lines 23-30; col 6, lines 18-32, lines 54-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use additional criteria in order to select the proper mobile based on, i.e. the location of the mobile, signal strength in adjacent cells so that there can be proper allocation of resources available to the paid user as suggested by

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Hsu et al (col 6, lines 54-64).

Regarding claim 11, Bodin et al and Hsu et al disclose the method of load load balancing of claim 9 wherein the step of identifying further comprises:

effecting a handoff of a communication connection that serves the selected at least one mobile subscriber station from the cell to the another cell (col 6, lines 31-39; col 6, line 65 – col 7, line 13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to handoff a communication connection from one cell to the other cell in order to maintain the call connection for the selected mobile station.

Regarding claim 15, Bodin et al and Hsu et al disclose the system for load balancing of claim 13 wherein said subscriber class of service identification means comprises:

class of service means for determining a class of service for said plurality of mobile subscriber stations served by said cell (col 6, lines 18-33);

mobile subscriber station selection means for selecting at least one mobile subscriber station having the lowest class of service of said plurality of mobile subscriber stations served by said cell (col 2, line 59– col 3, line 29);

candidate cell means for identifying another cell capable of serving said selected at least one mobile subscriber station (col 5, lines 23-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add selecting the mobile based on class of service in order to move the mobile with the lowest quality of service to the new cell first and leave the higher quality service mobile

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calls still connected to the same cell since less resources are available to those mobiles with less paid subscription as suggested by Hsu et al (col 6, lines 18-32).

Regarding claim 16, Bodin et al and Hsu et al disclose the system for load balancing of claim 15 wherein said mobile subscriber station selection means comprises:

additional criteria determining means for arbitrating among ones of at least one mobile subscriber station having the lowest class of service of said plurality of mobile subscriber stations served by said cell, using additional criteria selected from call management factors, such as: duration of call connection, location of mobile subscriber within the cell, proximity to an adjacent cell, signal strength in adjacent cells, and the like (col 5, lines 23-30; col 6, lines 18-32, lines 54-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use additional criteria in order to select the proper mobile based on, i.e. the location of the mobile, signal strength in adjacent cells so that there can be proper allocation of resources available to the paid user as suggested by Hsu et al (col 6, lines 54-64; col 5, lines 23-31).

Regarding claim 17, Bodin et al and Hsu et al disclose the system for load balancing of claim 15 wherein said subscriber class of service identification means further comprises:

handoff activation means for effecting a handoff of a communication connection that serves said selected at least one mobile subscriber station from said cell to said another cell (col 6, lines 31-39; col 6, line 65 - col 7, line 13). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to handoff a communication connection from one cell to the other cell in order to maintain the call connection for the selected mobile station.

Response to Arguments

8. Applicant's arguments filed 2/06/06 have been fully considered but they are not persuasive.

Regarding independent claims 1 and 7, applicant states that the cited reference, Bodin et al (US 5,241,685), do not disclose the "identifying at least one of a plurality of mobile stations served by the cell for reassignment to another cell". The examiner respectfully disagrees. In col 5, lines 1-15 of the Bodin reference states that "When the cell is determined, the MSC looks for an idle voice channel in the cell. If all voice channels are busy at the moment, the next best cell is taken providing that it fulfills the criteria, when the voice channel has been selected an order to start the transmitter in the base station is issued to the new cell. Then an order to the mobile station for turning to the selected voice channel is sent. The base station in the new cell and the mobile then can communicate". Therefore, in other words, an order to a specific mobile station to turn to the selected voice channel in the reassigned new cell which reads on the claimed passage above.

Regarding claim 13, the claimed "predetermined threshold" reads on the level in which a cell reaches its traffic limit, therefore the cited reference increases the entering threshold for this particular cell to slow down traffic while decreasing the threshold for adjacent lower traffic cells (col 6, lines 9-42), while "identifying at least one of a plurality

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of mobile stations served by the cell for reassignment to another cell" by ordering specific mobile stations to turn to the selected voice channel of the reassigned cell (see Bodin; col 5, lines 1-15). Therefore, the office action stands rejected as set forth in the previous office action filed 1/12/06.

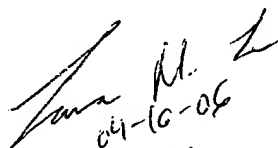
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N. Le whose telephone number is (571) 272-7891. The examiner can normally be reached on M-F 9:30-18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lana Le


04-16-06
LANA LE
PRIMARY EXAMINER